

Poisonous Plant Safety Guidelines

Most contents courtesy of USGS Safety and Health for Field Operations Handbook 445-3-H (2/2014)

Introduction

Many native and exotic plants are poisonous to humans when ingested. However, the more common problem with poisonous plants during field operations arises from contact with the sap oil of plants that can cause allergic skin reactions, blistering, or photodermatitis (abnormally sensitive skin reactions to ultraviolet radiation). Examples of poisonous plants include, but are not limited to, poison ivy, poison oak, poison sumac, poison hemlock, cow parsnip, giant hogweed, and poodle-dog bush.

Plant Identification and Exposure Symptoms

There are numerous variations of poison ivy, poison oak, and poison sumac, and all are within the *Toxicodendron* species. The wise old saying “*Leaves of three, let it be!*” is a helpful reminder for identifying poison ivy and oak, but not poison sumac, which usually has clusters of 7 to 13 leaves.



FIGURE 1: Typical Examples of Poison Ivy (left), Poison Oak (center) and Poison Sumac (right).
Note that regional variations in plant phenotypes can exist.

Even poison ivy and poison oak may have more than three leaves, and their form may vary greatly depending upon the exact species encountered, the local environment, and the season. Being able to identify local varieties of these poisonous plants throughout the seasons and differentiating them from common nonpoisonous look-a-likes are the major keys to avoiding exposure.

Poison ivy, poison oak, and poison sumac release an oil, urushiol, when the leaf or other plant parts are bruised, damaged, or burned. When the oil gets on the skin an allergic reaction,

referred to as contact dermatitis, occurs in most exposed people as an itchy red rash with bumps or blisters.

Poison Ivy. Range: Across the United States, except Alaska and Hawaii; limited in California.

- Eastern poison ivy is typically a hairy, ropelike vine with three shiny green (or red in the fall) leaves budding from one small stem.
- Western poison ivy is typically a low shrub with three leaves that does not form a climbing vine.
- May have yellow or green flowers and white to green-yellow or amber berries.

Poison oak. Range: Primarily the Southeast and West Coast.

- Typically a shrub with leaves of three, similar to poison ivy.
- Pacific poison oak may be vine-like.
- May have yellow or green flowers and clusters of green-yellow or white berries.

Poison sumac. Range: Abundant along the Mississippi River and boggy areas of the Southeast.

- Woody shrub that has stems that contain 7 to 13 leaves arranged in pairs.
- May have glossy, pale yellow, or cream-colored berries.

Cow parsnip (*Heracleum maximum*), giant hogweed (*Heracleum mantegazzianum*), and poison hemlock (*Conium maculatum*) are all members of the carrot family, and are capable of producing photodermatitis and skin blistering if you come in contact with their furanocoumarin secretions. All three resemble the relatively benign and abundant Queen Anne's Lace (*Daucus Carota*) or wild carrot plant. Even the *D. Carota* can produce mild skin irritation when wet foliage is contacted. Thus, it is best to avoid contact with any plants that look like wild carrots.

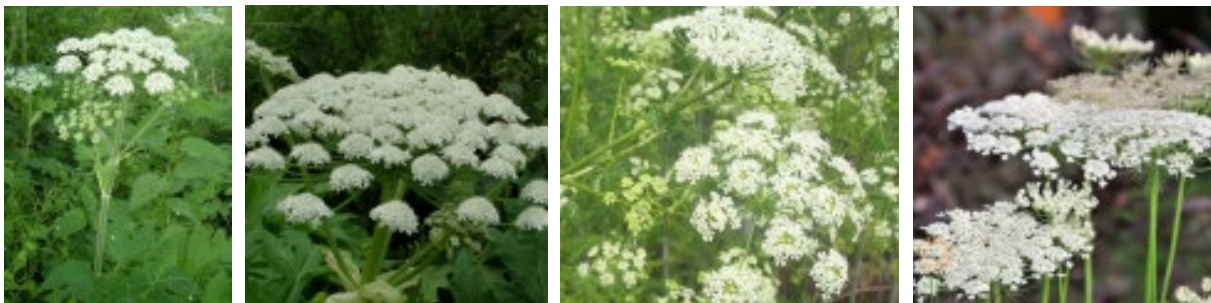


FIGURE 2: Cow Parsnip (left), Giant Hogweed (left-center), and Poison Hemlock (right-center). All look very similar to the relatively non-poisonous and abundant Queen Anne's Lace (right).

Cow parsnip. Range: Alaska, Canada, much of the U.S. mainland except for Southeast/Gulf Coast.

Giant hogweed. Range: Northeast, Midwest, and Pacific Northwest U.S.; Maritime, Eastern, and West Coast of Canada.

Poison hemlock. Range: Most U.S. states and Canadian provinces, except Alaska, Hawaii, Nunavut, Yukon, and the Northwest Territories.

The poodle-dog bush (*Eriodictyon parryi*) has small hair-like structures which can readily stick to skin and clothing. Prenylated phenolic compounds on these hairs can produce allergic contact dermatitis with subsequent immune system sensitization.

Range: Baja California and Southern California, north to San Luis Obispo and Tulare Counties. It prefers high-sloped plains areas, such as land recently scarred by fires or landslides.



FIGURE 3: Poodle-Dog Bush flowering (left) and non-flowering (right)

Prevention

The best method of prevention is for all field personnel to recognize the types of poisonous plants that might exist in areas where field work is being conducted. Steer clear of all plants that even superficially resemble known poisonous plants; in fact, avoid skin contact with any plant.

Additional preventive measures include the following:

- Wear long sleeves, long pants, boots, and gloves. Wash exposed clothing separately in hot water with detergent.

- Barrier skin creams, such as lotions containing bentoquatam, may offer some protection before contact with oily poisonous plants (e.g. *Toxicodendron* sp.). Barrier creams should be washed off and reapplied twice a day.
- After use, clean tools with rubbing alcohol (isopropanol) or soap and lots of water. Wear disposable gloves during this process.
- Wash hands before urinating. Be careful about wiping sweat from the face and around the eyes with your hands.
- DO NOT burn brush that may contain poisonous plants. Inhaling smoke from burning poisonous plants can cause severe allergic respiratory problems.
- DO NOT use unidentified leaves as emergency toilet paper in the field.
- DO NOT use a leaf mulcher in areas with poison oak unless your legs and arms are covered and you are wearing a face shield.

First Aid Following Exposure to Poisonous Plants

Although over-the-counter topical medications may relieve symptoms for most people, immediate medical attention may be required for severe reactions, particularly when exposed to the smoke from burning poisonous plants, which can cause lung irritation when inhaled.

Field personnel who come in contact with poisonous plants should:

- Immediately rinse skin with rubbing alcohol, specialized poison plant washes, degreasing soap (such as dishwashing soap) or detergent, and lots of water. Rinse frequently so that wash solutions do not dry on the skin and further spread the irritant oils/compounds.
- Scrub under nails with a brush.
- Apply wet compresses, calamine lotion, or hydrocortisone cream to the skin to reduce itching and blistering. Follow the directions on any creams and lotions. Do not apply to broken skin, such as open blisters. Oatmeal baths may relieve itching.
- An antihistamine such as diphenhydramine (Benadryl) can be taken to help relieve itching. Follow directions on the package. Drowsiness may occur.
- In severe cases, or rashes on the face or genitals, seek professional medical attention.
- Call 911 or go to a hospital emergency room if personnel are suffering a severe allergic reaction, such as swelling or difficulty breathing, or has had a severe reaction in the past.

Please contact UNLV Risk Management & Safety (702-895-4226) if you have any additional questions or concerns about poisonous plants you might encounter during field operations.